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## AMENDMENTS TO THE CLAIMS

This listing of the claims will replace all prior versions, and listings, of claims in the application:

1. (Currently amended) A composition[,] comprising a 3'-OH, 5'-OH synthetic phosphodiester nucleotide sequence, a chemotherapeutic agent, and a pharmaceutically acceptable carrier, wherein the synthetic phosphodiester nucleotide sequence is selected from the group consisting of SEQ ID NOs:8-10, 25, 26, 41-43, 45 and 46 ~~SEQ ID NOs:8, 10, 25, 42, 43 and 45.~~

2-9. (Cancelled)

10. (Currently amended) The composition of Claim [5] 1, wherein the chemotherapeutic agent is an antimetabolite, an alkylating agent, or a hormone antagonist.

11-58. (Cancelled)

59. (Previously presented) The composition of Claim 1, wherein the synthetic phosphodiester nucleotide sequence is SEQ ID NO:8.

60. (Cancelled)

61. (Previously presented) The composition of Claim 1, wherein the synthetic phosphodiester nucleotide sequence is SEQ ID NO:10.

62. (Previously presented) The composition of Claim 1, wherein the synthetic phosphodiester nucleotide sequence is SEQ ID NO:25.

63-64. (Cancelled)

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65. (Previously presented) The composition of Claim 1, wherein the synthetic phosphodiester nucleotide sequence is SEQ ID NO:42.

66. (Previously presented) The composition of Claim 1, wherein the synthetic phosphodiester nucleotide sequence is SEQ ID NO:43.

67. (Previously presented) The composition of Claim 1, wherein the synthetic phosphodiester nucleotide sequence is SEQ ID NO:45.

68. (Cancelled)

69. (New) A composition comprising a 3'-OH, 5'-OH synthetic phosphodiester nucleotide sequence, a chemotherapeutic agent, and a pharmaceutically acceptable carrier, wherein the synthetic phosphodiester nucleotide sequence is selected from the group consisting of SEQ ID NOs:8-10, 25, 26, 41-43, 45 and 46, and the chemotherapeutic agent is an antimetabolite, an alkylating agent, or a hormone antagonist.

70. (New) The composition of Claim 69, wherein the synthetic phosphodiester nucleotide sequence is SEQ ID NO:8.

71. (New) The composition of Claim 69, wherein the synthetic phosphodiester nucleotide sequence is SEQ ID NO:9

72. (New) The composition of Claim 69, wherein the synthetic phosphodiester nucleotide sequence is SEQ ID NO:10.

73. (New) The composition of Claim 69, wherein the synthetic phosphodiester nucleotide sequence is SEQ ID NO:25.

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74. (New) The composition of Claim 69, wherein the synthetic phosphodiester nucleotide sequence is SEQ ID NO:26.

75. (New) The composition of Claim 69, wherein the synthetic phosphodiester nucleotide sequence is SEQ ID NO:41.

76. (New) The composition of Claim 69, wherein the synthetic phosphodiester nucleotide sequence is SEQ ID NO:42.

77. (New) The composition of Claim 69, wherein the synthetic phosphodiester nucleotide sequence is SEQ ID NO:43.

78. (New) The composition of Claim 69, wherein the synthetic phosphodiester nucleotide sequence is SEQ ID NO:45.

79. (New) The composition of Claim 69, wherein the synthetic phosphodiester nucleotide sequence is SEQ ID NO:46.

80. (New) The composition of Claim 1, wherein the synthetic phosphodiester nucleotide sequence is SEQ ID NO:9.

81. (New) The composition of Claim 1, wherein the synthetic phosphodiester nucleotide sequence is SEQ ID NO:26.

82. (New) The composition of Claim 1, wherein the synthetic phosphodiester nucleotide sequence is SEQ ID NO:41.

83. (New) The composition of Claim 1, wherein the synthetic phosphodiester nucleotide sequence is SEQ ID NO:46.

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84. (New) A method of inducing a response in an animal having cancer or a human comprising administering a composition comprising a 3'-OH, 5'-OH synthetic phosphodiester nucleotide sequence selected from a group consisting of SEQ ID NOs:8-10, 25, 26, 41-43, 45 and 46, a chemotherapeutic agent, and a pharmaceutically acceptable carrier to the animal or the human having cancer in an amount effective to induce a response selected from the group consisting of induction of cell cycle arrest in cancer cells, inhibition of proliferation in cancer cells, activation of caspases in cancer cells, induction of apoptosis in cancer cells and production of cytokines by immune system cells.

85. (New) The method of Claim 84, wherein the response is induction of cell cycle arrest in the cancer cells.

86. (New) The method of Claim 84, wherein the response is inhibition of proliferation of the cancer cells.

87. (New) The method of Claim 84, wherein the response is activation of caspases in the cancer cells.

88. (New) The method of Claim 87, wherein the caspases are selected from the group consisting of caspase 3 and caspase 7.

89. (New) The method of Claim 84, wherein the response is induction of apoptosis in the cancer cells.

90. (New) The method of Claim 89, wherein the induction of apoptosis is independent of a cell property selected from the group consisting of Fas, p53/p21, p21/waf-1/CIP, p15ink4B, p16ink4, drug resistance, caspase 3, TGF-beta 1 receptor and hormone dependence.

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91. (New) The method of Claim 84, wherein the response is production of cytokines by the immune system cells.

92. (New) The method of Claim 91, wherein the cytokines are selected from the group consisting of IL-1-beta, IL-6, IL-10, IL-12, and TNF-alpha.

93. (New) The method of Claim 84, wherein the cancer is selected from the group consisting of a primary carcinoma, a secondary carcinoma, a primary sarcoma and a secondary sarcoma.

94. (New) The method of Claim 84, wherein the cancer is selected from the group consisting of leukemia, lymphoma, breast, prostate, colorectal, ovarian and bone cancer and metastases therefrom.

95. (New) The method of Claim 84, wherein the composition is administered at the cancer cells.

96. (New) The method of Claim 84, wherein the chemotherapeutic agent is selected from the group consisting of an antimetabolite, an alkylating agent and an hormone antagonist.

97. (New) The method of Claim 84, wherein the synthetic phosphodiester nucleotide sequence is SEQ ID NO:8.

98. (New) The method of Claim 84, wherein the synthetic phosphodiester nucleotide sequence is SEQ ID NO:9

99. (New) The method of Claim 84, wherein the synthetic phosphodiester nucleotide sequence is SEQ ID NO:10.

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100. (New) The method of Claim 84, wherein the synthetic phosphodiester nucleotide sequence is SEQ ID NO:25.

101. (New) The method of Claim 84, wherein the synthetic phosphodiester nucleotide sequence is SEQ ID NO:26.

102. (New) The method of Claim 84, wherein the synthetic phosphodiester nucleotide sequence is SEQ ID NO:41.

103. (New) The method of Claim 84, wherein the synthetic phosphodiester nucleotide sequence is SEQ ID NO:42.

104. (New) The method of Claim 84, wherein the synthetic phosphodiester nucleotide sequence is SEQ ID NO:43.

105. (New) The method of Claim 84, wherein the synthetic phosphodiester nucleotide sequence is SEQ ID NO:45.

106. (New) The method of Claim 84, wherein the synthetic phosphodiester nucleotide sequence is SEQ ID NO:46.

107. (New) A method comprising administering to an animal or a human having cancer a composition comprising a 3'-OH, 5'-OH synthetic phosphodiester nucleotide sequence selected from the group consisting of SEQ ID NOs:8-10, 25, 26, 41-43, 45 and 46, a chemotherapeutic agent, and a pharmaceutically acceptable carrier is administered to the animal or the human having cancer in an amount effective to treat the cancer in the animal or the human.

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108. (New) The method of Claim 107, wherein the composition is administered at the cancer.

109. (New) The method of Claim 107, wherein the chemotherapeutic agent is selected from the group consisting of an antimetabolite, an alkylating agent and an hormone antagonist.

110. (New) The method of Claim 107, wherein the synthetic phosphodiester nucleotide sequence is SEQ ID NO:8.

111. (New) The method of Claim 107, wherein the synthetic phosphodiester nucleotide sequence is SEQ ID NO:9

112. (New) The method of Claim 107, wherein the synthetic phosphodiester nucleotide sequence is SEQ ID NO:10.

113. (New) The method of Claim 107, wherein the synthetic phosphodiester nucleotide sequence is SEQ ID NO:25.

114. (New) The method of Claim 107, wherein the synthetic phosphodiester nucleotide sequence is SEQ ID NO:26.

115. (New) The method of Claim 107, wherein the synthetic phosphodiester nucleotide sequence is SEQ ID NO:41.

116. (New) The method of Claim 107, wherein the synthetic phosphodiester nucleotide sequence is SEQ ID NO:42.

117. (New) The method of Claim 107, wherein the synthetic phosphodiester nucleotide sequence is SEQ ID NO:43.

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118. (New) The method of Claim 107, wherein the synthetic phosphodiester nucleotide sequence is SEQ ID NO:45.

119. (New) The method of Claim 107, wherein the synthetic phosphodiester nucleotide sequence is SEQ ID NO:46.

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